

LISTING OF CLAIMS:

1. (Currently Amended) An electronic power converter for supplying direct current power output from alternating current power input, comprising:

an encapsulated portion including at least high-voltage electronic circuitry where components of the at least high-voltage electronic circuitry are coated with an encapsulating high-dielectric material that is substantially free of voids therein to prevent breakdown; and

an integrated connector for receiving a detachable alternating current line cord, the alternating current line cord having at least two wires therein;

wherein said power converter is mountable as a component on a printed circuit board to supply direct current power to the printed circuit board.

2. (Previously Presented) The power converter of claim 1, further comprising an inrush current limiting circuit, said inrush current limiting circuit, including:

a. a bridge rectifier with a direct current return path;

b. a MOSFET switch connected to the direct current return path of the bridge rectifier;

c. a capacitor which is charged via a current limited source;

d. a voltage level detection circuit to maintain the MOSFET switch in an off state until a line voltage reaches a near zero threshold;

e. a resistive charging path to turn the MOSFET switch to an on state once the line voltage reaches the near zero threshold; and

f. a resistive connection to a housekeeping supply of the power converter which maintains the MOSFET switch in the on state.

3. (Original) The power converter of claim 1, further comprising:

a secondary side, isolated low voltage ON/OFF function, said function being implemented by circuitry including a transformer coupled peak detector to power a light emitter of an opto-coupler which has a photo-detector, the photo-detector being connected to the switching controller in a manner adequate to disable the power supply output in response to the signal received by the photo-detector, said emitter is also connected to a user accessible ON/OFF pin.

4. (Previously Presented) The power converter of claim 1, further comprising a low voltage sense function consisting of a peak detector connected to the power supply transformer for sensing a primary rectified voltage in a secondary low voltage manner; and

a pin, accessible to the user, providing a signal representing the low voltage sense function.

5. (Previously Presented) The power converter of claim 4, further comprising:

a comparison circuit, connected to the peak detector, for comparing the peak detected voltage to a known reference voltage and producing a signal indicating a range within which the primary rectified voltage falls.

6. (Previously Presented) The power converter of claim 1, further comprising:

a secondary side, isolated low voltage ON/OFF function; and

a low voltage sense function, said functions being implemented by circuitry including a peak detector for sensing the instantaneous primary rectified voltage connected to a linear regulator / voltage limiting circuit, said linear regulator / voltage limiting circuit being further connected to a light emitter of an opto-coupler, said opto-coupler being further connected to an error amplifier and an ON/OFF pin in such a manner as to provide an isolated secondary low voltage indication of the primary line voltage and to allow the user to turn the device off.

7. (Currently Amended) An electronic encapsulated power converter, comprising:  
a case;  
circuitry for supplying direct current power output from alternating current power input;  
an encapsulating material coating the circuitry, the encapsulating material having a high dielectric constant and thermal conductivity;  
an integrated, 3-pin connector for receiving a detachable alternating current line cord, said connector accessible through said case; and  
threaded mounts extending from said case, wherein the threaded mounts are earth grounded and allow the converter to be rigidly mounted as a component to a circuit board to supply power thereto.

8. (Previously Presented) An encapsulated alternating current to direct current power converter having an inrush current limiting circuit, said inrush current limiting circuit, including:

- a. a bridge rectifier with a direct current return path;
  - b. a MOSFET switch connected to the direct current return path of the bridge rectifier;
  - c. a capacitor which is charged via a current limited source;
  - d. a voltage level detection circuit to maintain the MOSFET switch in an off state until a line voltage reaches a near zero threshold;
  - e. a resistive charging path to turn the MOSFET switch to an on state once the line voltage reaches the near zero threshold; and
  - f. a resistive connection to a housekeeping supply of the power converter which maintains the MOSFET switch in the on state;
- wherein said current limiting circuit is encapsulated with the power converter.

9. (Original) The power converter of claim 8, further comprising:

a secondary side, isolated low voltage ON/OFF function, said function being implemented by circuitry including a transformer coupled peak detector to power a light emitter of an opto-coupler which has a photo-detector, the photo-detector being connected to the primary controller in a manner adequate to disable the power supply output in response to the signal received by the photo-detector, said emitter is also connected to a user accessible ON/OFF pin.

10. (Previously Presented) The power converter of claim 8, further comprising a low voltage sense function consisting of a peak detector connected to the power supply transformer for sensing a primary rectified voltage in a secondary low voltage manner; and

a pin, accessible to the user, for providing a signal representing the low voltage sense function.

11. (Previously Presented) The power converter of claim 10, further comprising:

a comparison circuit, connected to the peak detector, for comparing the peak detected voltage to a known reference voltage and producing a signal indicating a range within which the primary rectified voltage falls

12. (Previously Presented) The power converter of claim 8, further comprising:

a secondary side, isolated low voltage ON/OFF function; and

a low voltage sense function, said functions being implemented by circuitry including a peak detector for sensing the instantaneous primary rectified voltage connected to a linear regulator / voltage limiting circuit, said linear regulator / voltage limiting circuit being further connected to a light emitter of an opto-coupler, said opto-coupler being further connected to an error amplifier and an ON/OFF pin in such a manner as to provide an isolated secondary low voltage indication of the primary line voltage and to allow the user to turn the device off.

13. (Previously Presented) The power converter of claim 10, wherein the low voltage sense function is implemented by circuitry including:

- a. a comparison circuit which compares an instantaneous primary voltage to a known reference voltage;
- b. a peak detector, electrically connected to said comparison circuit, for sensing the instantaneous primary voltage and providing a signal indicating the instantaneous primary voltage to the comparison circuit; and
- c. an independent pin, connected to the comparison circuit to provide an output signal when the instantaneous primary voltage is determined to be below the reference voltage.

14. (Currently Amended) An electronic device, comprising;  
at least one circuit board located within the device;  
a cover enclosing the electronic device; and  
an electronic power converter including fully encapsulated electronic circuitry, the circuitry coated with an encapsulating material, the encapsulating material having thermal conductivity and a high dielectric constant; and  
an integrated connector, accessed through an aperture in said cover, for receiving a detachable alternating current line cord, the alternating current line cord having at least two wires therein, wherein said power converter is mounted as a component on said circuit board to supply power to said circuit board.

15. (Previously Presented) The electronic device of claim 14, wherein said integrated connector of the power converter provides connection to an alternating current utility line source that is independent of the circuit board to which the power converter is attached.

16. (Cancelled)

17. (Previously Presented) The electronic device of claim 14, further comprising an inrush current limiting circuit, said inrush current limiting circuit, including:

- a. a bridge rectifier with a direct current return path;
- b. a MOSFET switch connected to the direct current return path of the bridge rectifier;
- c. a capacitor which is charged via a current limited source;
- d. a voltage level detection circuit to maintain the MOSFET switch in an off state until a line voltage reaches a near zero threshold;
- e. a resistive charging path to turn the MOSFET switch to an on state once the line voltage reaches the near zero threshold; and
- f. a resistive connection to a housekeeping supply of the power converter which maintains the MOSFET switch in the on state.

18. (Original) The electronic device of claim 17, further comprising:

a secondary side, isolated low voltage ON/OFF function, said function being implemented by circuitry including a transformer coupled peak detector to power a light emitter of an opto-coupler which has a photo-detector, the photo-detector being connected to the primary controller in a manner adequate to disable the power supply output in response to the signal received by the photo-detector, said emitter is connected to a user accessible ON/OFF pin.

19. (Previously Presented) The electronic device of claim 17, further comprising a low voltage sense function consisting of a peak detector connected to the power supply transformer for sensing a primary rectified voltage and providing a representative signal to a pin that is accessible to the user.

20. (Previously Presented) The electronic device of claim 19, further comprising:

a comparison circuit, connected to the peak detector, for comparing the peak detected voltage to a known reference voltage and producing a signal indicating a range within which the primary rectified voltage falls.

21. (Previously Presented) The electronic device of claim 17, further comprising:  
a secondary side, isolated low voltage ON/OFF function; and

a low voltage sense function, said functions being implemented by circuitry including a peak detector for sensing the instantaneous primary rectified voltage connected to a linear regulator / voltage limiting circuit, said linear regulator / voltage limiting circuit being further connected to a light emitter of an opto-coupler, said opto-coupler being further connected to an error amplifier and an ON/OFF pin in such a manner as to provide an isolated secondary low voltage indication of the primary line voltage and to allow the user to turn the device off.